



Anderson 5-13-9-12

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**Patent Application**

Applicant(s): G. Anderson et al.  
Case: 5-13-9-12  
Serial No.: 10/022,926  
Filing Date: December 18, 2001  
Group: 2642  
Examiner: Thuan P. Knowlin

I hereby certify that this paper is being deposited on this date with the U.S. Postal Service as first class mail addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Signature:

*Lisa L. Tulpis*

Date: July 5, 2006

Title: Methods and Apparatus for Automated Monitoring and  
Action Taking Based on Decision Support Mechanism

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APPEAL BRIEF

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

Sir:

Applicants (hereinafter referred to as "Appellants") hereby appeal the final rejection of claims 1-9, 12-18 and 20-23 of the above-referenced application.

REAL PARTY IN INTEREST

The present application is assigned to Lucent Technologies Inc., as evidenced by an assignment recorded June 11, 2002 in the U.S. Patent and Trademark Office at Reel 012989, Frame 0362. The assignee, Lucent Technologies Inc., is the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no known related appeals and interferences.

### STATUS OF CLAIMS

Claims 1-9, 12-18 and 20-23 are pending in the present application. Claims 1, 9, 16 and 23 stand rejected under 35 U.S.C. §112, first paragraph. Claims 1-9, 12-18 and 20-23 stand rejected under 35 U.S.C. §103(a). Claims 1-9, 12-18 and 20-23 are appealed.

### STATUS OF AMENDMENTS

There have been no amendments filed subsequent to the final rejection.

### SUMMARY OF CLAIMED SUBJECT MATTER

Principles of the present invention provide techniques for use in accordance with user-interactive processing systems such as e-commerce applications, interactive voice response (IVR) systems and workflow systems which provide automated monitoring of user activity and personalized action taking based on such activity, in accordance with a decision support mechanism (Specification, page 2, lines 22-25).

In one aspect of the invention, an automated technique for use in accordance with a user-interactive processing system comprises the following automated steps. First, one or more interactions that a user has with one or more applications associated with the processing system are monitored. Next, data obtained in association with the monitoring operation is processed to compute a decision value representative of whether or not the user may need intervention with respect to the one or more applications. Then, the intervention is proactively or automatically offered to the user when the computed decision value represents a result indicative that the user is likely to need the intervention (Specification, page 2, line 26, through page 3, line 2).

The proactively offered intervention may comprise assistance provided by an individual through a communication channel established between the user and the individual in accordance with the user-interactive processing system. This may be a connection over a standard telephone line or a connection over a network with which the user interacts with the one or more applications of the processing system (Specification, page 3, lines 3-7).

In one embodiment, the user-interactive processing system comprises one or more servers having one or more electronic commerce-based applications executing in association therewith. In the case where the network is the Internet or the World Wide Web, the one or more servers may form a web storefront. However, in alternative embodiments, the user-interactive processing system may comprise an IVR system, or even a workflow system such as a back-office type workflow system wherein appropriate notifications or other actions are invoked if a given workflow enactment will be delayed beyond some threshold or will otherwise violate some criterion (Specification, page 3, lines 8-15).

In another aspect of the invention, apparatus for use in accordance with a user-interactive processing system comprises at least one processor coupled to the user-interactive processing system and operative to: (i) process data obtained in association with one or more interactions a user has with one or more applications associated with the processing system to compute a decision value representative of whether or not the user may need intervention with respect to the one or more applications; and (iii) proactively cause the offering of the intervention to the user when the computed decision value represents a result indicative that the user is likely to need the intervention. The apparatus may also comprise memory, coupled to the at least one processor, for storing at least one of the obtained data and the computed decision value. The invention may also comprise a machine readable medium containing one or more programs which when executed implement the above operations performed by the processor (Specification, page 3, lines 16-26).

In one embodiment, the processor comprises a rule-based decision engine, which may preferably be based on at least one of formal and heuristic reasoning such as the so-called "Vortex" engine described further herein. The data obtained may be raw data and/or semantic information (Specification, page 3, lines 27-30).

In yet another aspect of the invention, a network-based system comprises at least one server operative to execute one or more electronic commerce-based applications for use by at least one customer via a network. The system also comprises at least one decision engine coupled to the at least one server and operative to: (i) process data obtained in association with one or more interactions the customer has with the one or more electronic commerce-based applications to

compute a decision value representative of whether or not an action should be taken with respect to the customer; and (ii) proactively taking the action with respect to the customer when the computed decision value represents a result indicative that the action should be taken with respect to the customer (Specification, page 3, line 31, through page 4, line 7).

More specific to the electronic commerce or web-based application, the proactively taken action may comprise offering assistance provided by a customer service representative (CSR) through a communication channel established between the customer and the customer service representative in accordance with the at least one server. Alternatively, the proactively taken action may comprise presenting to the user data relevant to the one or more electronic commerce-based applications, wherein the relevant data is related to options available to the customer (Specification, page 4, lines 8-13).

Still in the web storefront context, the computed decision value may be based on one or more attributes comprising: (i) an attribute representative of a business value associated with the customer or the one or more applications; (ii) an attribute representative of a frustration level attributable to the customer with respect to the one or more interactions; (iii) an attribute representative of an estimated profit opportunity associated with the customer; and/or (iv) an attribute representative of availability of resources capable of taking the action (Specification, page 4, lines 14-19).

The system may further comprise one or more client computing devices coupled to the at least one server for use by the customer in interacting with the at least one server, and at least one database coupled to the at least one decision engine for use in obtaining data to be processed by the decision engine (Specification, page 4, lines 20-23).

Advantageously, in a web-based system for example, the on-line decision support provided in accordance with the invention can be used in a wide variety of e-commerce applications requiring automated, real-time, intelligent interventions, including carefully targeted promotions (e.g., free shipping) and discounts, assisting with navigation through self-help material, supporting dynamic price negotiations, and even selecting large portions of page content (Specification, page 4, lines 24-29).

Principles of the present invention are illustrated in the context of a system referred to as a “May I Help You” system or MIHU system. MIHU system 10 is described in the context of FIG. 1. Further, FIG. 2 illustrates a representative decision flow structure for making a MIHU decision. FIG. 3 illustrates report data associated with MIHU decisions. FIG. 4 illustrates a representative decision flow structure illustrating attribute rules and combining policies for making a MIHU decision. Still further, an on-line decision (Vortex) engine 20 is illustrated in the context of FIG. 5 (Specification, page 9, line 27, through page 24, line 12).

#### GROUND OF REJECTION TO BE REVIEWED ON APPEAL

(1) Claims 1, 9, 16 and 23 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

(2) Claims 1-6, 9, 12, 13, 16-18 and 20-23 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,256,620 to Jahawar et al. (hereinafter “Jahawar”) in view of U.S. Patent No. 6,604,141 to Ventura et al. (hereinafter “Ventura”) in view of U.S. Patent No. 6,349,290 to Horowitz et al. (hereinafter “Horowitz”) in further view of U.S. Patent No. 6,115,462 to Servi et al. (hereinafter “Servi”).

(3) Claims 7, 8, 14 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Jahawar in view of Ventura in view of Horowitz in view of Servi in further view of Newton’s Telecom Dictionary, 16th Edition (hereinafter “Newton”).

#### ARGUMENTS

(1) Claims 1, 9, 16 and 23 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

Regarding the §112, first paragraph, rejection of claims 1, 9, 16 and 23, Appellants respectfully point out that, in their previous response, they indicated illustrative parts of the present specification that supported the claim language added to the independent claims in that response. Namely, Appellants cited, by way of example only, canceled claim 19; page 6, line 21, through page 7, line 14; and page 11, lines 18-26, in support of the added claim language.

The final Office Action continues to contend that the limitation: “an individual monitoring one or more computed decision values, and the individual adjusting the decision policy, when necessary or desired, so as to improve business-related performance, wherein the individual is able

to adjust the decision policy without a need for programming expertise,” is not supported by the present specification.

Again, Appellants respectfully point to page 6, line 21, through page 7, line 14; and page 11, lines 18-26, for illustrative support. It is stated therein that a decision support language of the invention “can be ‘owned’ or controlled by business analysts and managers, without relying on programmers that translate the decision specifications into a highly technical format.” It is further stated therein that the invention involves “reporting and ‘tuning’ for business performance, i.e., the continued examination by a business analyst/manager 16 of the decisions made for the web storefront, with the ultimate goal of making improvements on the underlying decision policies . . . aspects of the Vortex language make it possible to quickly modify a Vortex program in order to achieve a desired effect . . . [t]hus, as indicated in FIG. 1, the business analyst/manager 16 monitors the decisions being made by the decision engine 20 and, if necessary or desired, adjusts decision flows for improved business performance.”

Appellants assert that, based at least on the illustrative passages from the present specification reproduced above, there is more than sufficient support for the amended language.

In the “Response to Arguments” section of the final Office Action, the Examiner seems to suggest that for the addition of language to a claim to be proper under §112, first paragraph, the added language must appear as verbatim copy in the specification. However, this is not what §112, first paragraph, requires. In fact, the final Office Action at page 2, paragraph 2, states what §112, first paragraph, requires. That is, as stated in the final Office Action, the claim must contain subject matter that is “described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.” Under this standard, Appellants believe that, at least, the above-cited portions of the specification reasonably convey that Appellants had possession of the claimed invention.

Furthermore, while Appellants believe that the specification specifically mentions the amended language, the Federal Circuit has stated that even “the failure of the specification to specifically mention a limitation that later appears in the claims is not a fatal one when one skilled in the art would recognize upon reading the specification that the new language reflects what the specification shows has been invented.” All Dental Prodx, LLC v. Advantage Dental Products, Inc., 309 F.3d 774, 779 (Fed. Cir. 2002).

Accordingly, it is respectfully requested that the §112, first paragraph, rejection be withdrawn.

(2) Claims 1-6, 9, 12, 13, 16-18 and 20-23 are rejected under 35 U.S.C. §103(a) as being unpatentable over Jahawar in view of Ventura in view of Horowitz in further view of Servi.

Regarding the §103(a) rejections, the combination of Jahawar, Ventura, Horowitz and Servi fails to teach or suggest, at least, the step of an individual monitoring one or more computed decision values, and the individual adjusting the decision policy, when necessary or desired, so as to improve business-related performance, wherein the individual is able to adjust the decision policy without a need for programming expertise, as in the claimed invention.

In addition, despite an assertion to the contrary in the final Office Action, Horowitz (and thus any combinations including Horowitz) does not teach or suggest that the computed decision value is based on one or more attributes comprising at least one of: (i) an attribute representative of a business value associated with the user or the one or more applications; (ii) an attribute representative of a frustration level attributable to the user with respect to the one or more interactions; (iii) an attribute representative of an estimated profit opportunity associated with the user; and (iv) an attribute representative of availability of resources capable of taking the action, as in the claimed invention.

In particular, the final Office Action at pages 5 and 6 cites steps from FIG. 26 of Horowitz in support of the rejection. However, as Appellants stated in their previous response, it is not clear how anything described in FIG. 26 relates to a “business value” and how that “business value” is used to compute the “decision value,” as per the claimed invention.

In the “Response to Arguments” section of the final Office Action, the Examiner does not address Appellants challenge to the rationale for the rejection but merely suggests that pages 5 and 6 of the Action state the reasons for the rejection.

But, Appellants point out that the cited portions of Horowitz discuss how a customer requests entry to a member lounge of a web site, the customer enters an ID and password, and the site retrieves “relationship information” based on customer preferences and presents the customer with focused prompting and advanced Internet collaborative features. Again, there is no notion of

a “business value” and how that “business value” is used to compute the “decision value,” as per the claimed invention.

Further, the final Office Action supports the rejection of the limitation reciting “an individual monitoring one or more computed decision values, and the individual adjusting the decision policy, when necessary or desired, so as to improve business-related performance, wherein the individual is able to adjust the decision policy without a need for programming expertise” by citing column 1, lines 28-41 of Servi. Despite a challenge by Appellants in their previous response requesting explanation of how or why this portion of Servi discloses the claim limitation, the “Response to Arguments” section merely states that the final Office Action sets out the reasons at page 7.

First, neither that part of Servi, nor any part of Servi, disclose such a feature. At column 1, lines 28-41, Servi states:

A routing parameter is a variable used to select a particular communication path over which a telephone call travels. A network manager sets the probabilistic routing parameter, which is one of many routing parameters, based upon many pieces of information relating to communication path traffic and transmission costs. As the information regarding traffic and costs becomes available to the network manager, the network manager sets the probabilistic routing parameters to increase overall system efficiency. However, the information available to the network manager exceeds the network manager's ability to process the information. It is, therefore, desirable to automatically determine routing probabilities that can then be modified either automatically by a processor or manually by the network manager to improve the routing of telephone calls.

It is clear that Servi does not teach or suggest that a network manager monitors computed decision values and adjusts a decision policy, when necessary or desired, so as to improve business-related performance, wherein the individual is able to adjust the decision policy without a need for programming expertise, as in the claimed invention.

Furthermore, Appellants assert that any combination including Servi is improper for at least the following reasons.

The Federal Circuit has stated that when patentability turns on the question of obviousness, the obviousness determination “must be based on objective evidence of record” and that “this precedent has been reinforced in myriad decisions, and cannot be dispensed with.” *In re Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002). Moreover, the Federal Circuit has stated that “conclusory



statements” by an examiner fail to adequately address the factual question of motivation, which is material to patentability and cannot be resolved “on subjective belief and unknown authority.” Id. at 1343-1344.

In previous Office Action that first cited Servi, the Examiner provided no statement to prove motivation to combine Servi with the other references. That is, the Office Action did not adequately address the factual question of motivation, as required by the Federal Circuit, since the Examiner failed to identify any objective evidence of record which supports the proposed combination.

In the final Office Action, the Examiner now adds a paragraph that states that “[i]t would have been obvious to one of ordinary skill in the art . . . to employ the feature of Servi as a way of allowing an individual to be able to adjust and monitor the decision policy without the help or interference of another. . . [t]his would allow the individual to adjust or change his or her decisions as desired or whenever necessary.”

Appellants submit that this statement is based on the type of “subjective belief and unknown authority” that the Federal Circuit has indicated provides insufficient support for an obviousness rejection. More specifically, the Examiner fails to identify any objective evidence of record which supports the proposed combination.

It is also respectfully asserted that the claims which depend from independent claims 1, 9 and 16 contain patentable subject matter in their own right.

Accordingly, it is respectfully requested that the §103 rejections be withdrawn.

(3) Claims 7, 8, 14 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Jahawar in view of Ventura in view of Horowitz in view of Servi in further view of Newton.

Appellants assert that such claims are patentable over the cited combination for at least the reasons given above for independent claims 1 and 9.

In rejecting the claim limitations of claims 7 and 14 (wherein the user-interactive processing system comprises an interactive voice response system) and claims 8 and 15 (wherein the user-interactive processing system comprises a workflow system), the final Office Action cites Newton’s

Telecom dictionary relating to an automatic call distributor (ACD). But, again, there is no explanation as to how Newton supports the idea that an IVR or a workflow system can be the user-interactive processing system with which the claimed invention is used.

The final Office Action at page 10 discusses modifying Jahawar and Ventura by “adding an IVR so that incoming calls can be forwarded from the ACD and the customer can access the system and verify information without having to wait for an attendant.” The final Office Action then summarily states that “IVRs use a workflow system in order to process incoming calls and forward these calls to the correct area of service requested by the customer.”

Appellants again submit that this statement is based on the type of “subjective belief and unknown authority” that the Federal Circuit (In re Lee cited above) has indicated provides insufficient support for an obviousness rejection. More specifically, the Examiner fails to identify any objective evidence of record which supports the proposed combination.

Accordingly, it is respectfully requested that the §103 rejections be withdrawn.

In view of the above, Appellants believe that claims 1-9, 12-18 and 20-23 are in condition for allowance and respectfully request favorable reconsideration.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "William E. Lewis", written in a cursive style.

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## CLAIMS APPENDIX

1. An automated method for use in accordance with a user-interactive business-related processing system, the method comprising the automated steps of:

monitoring one or more interactions a user has with one or more applications associated with the business-related processing system;

processing data obtained in association with the monitoring operation to compute a decision value representative of whether or not the user may need intervention with respect to the one or more applications, wherein the decision value is computed in accordance with a decision policy based on a combination of formal and heuristic reasoning, and further wherein the computed decision value is based on one or more attributes comprising at least one of: (i) an attribute representative of a business value associated with the user or the one or more applications; (ii) an attribute representative of a frustration level attributable to the user with respect to the one or more interactions; (iii) an attribute representative of an estimated profit opportunity associated with the user; and (iv) an attribute representative of availability of resources capable of taking the action;

proactively offering the intervention to the user when the computed decision value represents a result indicative that the user is likely to need the intervention; and

an individual monitoring one or more computed decision values, and the individual adjusting the decision policy, when necessary or desired, so as to improve business-related performance, wherein the individual is able to adjust the decision policy without a need for programming expertise.

2. The method of claim 1, wherein the proactively offered intervention comprises assistance provided by an individual through a communication channel established between the user and the individual in accordance with the user-interactive processing system.

3. The method of claim 2, wherein the communication channel comprises a connection over a standard telephone line.

4. The method of claim 2, wherein the communication channel comprises a connection over a network with which the user interacts with the one or more applications of the processing system.

5. The method of claim 1, wherein the user-interactive processing system comprises one or more servers having one or more electronic commerce-based applications executing in association therewith.

6. The method of claim 5, wherein the one or more electronic commerce-based applications comprise a web storefront.

7. The method of claim 1, wherein the user-interactive processing system comprises an interactive voice response system.

8. The method of claim 1, wherein the user-interactive processing system comprises a workflow system.

9. Apparatus for use in accordance with a user-interactive business-related processing system, the apparatus comprising:

at least one processor coupled to the user-interactive business-related processing system and operative to: (i) process data obtained in association with one or more interactions a user has with one or more applications associated with the business-related processing system to compute a decision value representative of whether or not the user may need intervention with respect to the one or more applications, wherein the decision value is computed in accordance with a decision policy based on a combination of formal and heuristic reasoning, and further wherein the computed decision value is based on one or more attributes comprising at least one of: (i) an attribute representative of a business value associated with the user or the one or more applications; (ii) an attribute representative of a frustration level attributable to the user with respect to the one or more interactions; (iii) an attribute representative of an estimated profit opportunity associated with the user; and (iv) an attribute representative of availability of resources capable of taking the action; (ii)

proactively cause the offering of the intervention to the user when the computed decision value represents a result indicative that the user is likely to need the intervention; and (iii) permit an individual to monitor one or more computed decision values, and to adjust the decision policy, when necessary or desired, so as to improve business-related performance, wherein the individual is able to adjust the decision policy without a need for programming expertise; and

memory, coupled to the at least one processor, for storing at least one of the obtained data and the computed decision value.

12. The apparatus of claim 9, wherein the data obtained is one of raw data and semantic information.

13. The apparatus of claim 9, wherein the user-interactive processing system comprises one or more servers having one or more electronic commerce-based applications executing in association therewith.

14. The apparatus of claim 9, wherein the user-interactive processing system comprises an interactive voice response system.

15. The apparatus of claim 9, wherein the user-interactive processing system comprises a workflow system.

16. A network-based system, the system comprising:  
at least one server operative to execute one or more electronic commerce-based applications for use by at least one customer via a network; and  
at least one decision engine coupled to the at least one server and operative to: (i) process data obtained in association with one or more interactions the customer has with the one or more electronic commerce-based applications to compute a decision value representative of whether or not an action should be taken with respect to the customer, wherein the decision value is computed in accordance with a decision policy based on a combination of formal and heuristic

reasoning, wherein the computed decision value is based on one or more attributes comprising at least one of: (a) an attribute representative of a business value associated with the customer or the one or more applications; (b) an attribute representative of a frustration level attributable to the customer with respect to the one or more interactions; (c) an attribute representative of an estimated profit opportunity associated with the customer; and (d) an attribute representative of availability of resources capable of taking the action; and (ii) proactively taking the action with respect to the customer when the computed decision value represents a result indicative that the action should be taken with respect to the customer;

wherein the decision engine permits an individual to monitor one or more computed decision values, and to adjust the decision policy, when necessary or desired, so as to improve business-related performance, and further wherein the individual is able to adjust the decision policy without a need for programming expertise.

17. The system of claim 16, wherein the proactively taken action comprises offering assistance provided by a customer service representative through a communication channel established between the customer and the customer service representative in accordance with the at least one server.

18. The system of claim 16, wherein the proactively taken action comprises presenting to the user data relevant to the one or more electronic commerce-based applications, wherein the relevant data is related to options available to the customer.

20. The system of claim 16, further comprising one or more client computing devices coupled to the at least one server for use by the customer in interacting with the at least one server.

21. The system of claim 16, further comprising at least one database coupled to the at least one decision engine for use in obtaining data to be processed by the decision engine.

22. The system of claim 16, wherein the data network comprises the Internet.

23. An article of manufacture for use in accordance with a user-interactive business-related processing system, the article comprising a machine readable medium containing one or more programs which when executed implement the steps of:

processing data obtained in association with one or more interactions a user has with one or more applications associated with the business-related processing system to compute a decision value representative of whether or not the user may need intervention with respect to the one or more applications, wherein the decision value is computed in accordance with a decision policy based on a combination of formal and heuristic reasoning, and further wherein the computed decision value is based on one or more attributes comprising at least one of: (i) an attribute representative of a business value associated with the user or the one or more applications; (ii) an attribute representative of a frustration level attributable to the user with respect to the one or more interactions; (iii) an attribute representative of an estimated profit opportunity associated with the user; and (iv) an attribute representative of availability of resources capable of taking the action;

proactively causing the offering of the intervention to the user when the computed decision value represents a result indicative that the user is likely to need the intervention; and

permitting an individual to monitor one or more computed decision values, and adjust the decision policy, when necessary or desired, so as to improve business-related performance, wherein the individual is able to adjust the decision policy without a need for programming expertise.

## EVIDENCE APPENDIX

None.



RELATED PROCEEDINGS APPENDIX

None.